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AND SPIRIT OF THE AGRICULTURAL JOURNALS OF THE DAY

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THE NEW YEAR—We greet our patrons with the compliments of the season, and wish them all a happy New Year. God grant that they may each live not only through this but through many more, and that, as each year shall revolve in its annual course, their homes may be the abodes of peace and plenty; that while worldly prosperity and health may place the means and power of temporal enjoyment within their possession, that a sense of gratitude towards the Author of their blessings, may dispose their hearts to improve time in the acquisition of those spiritual treasures, which vouchsafe their rewards, and crown their aspirations in another and a better sphere.

OUR OWN AFFAIRS—We dislike pressing our private affairs upon the notice of our subscribers, but the commencement of a new year is considered the appropriate time for the closing of the affairs of the old—and while we gratefully acknowledge the promptness with which our appeal, made at the usual period of forwarding our bills, has been met by many of our patrons, still we assure them, that we have still due us an amount which, had we it now at our control, would not only relieve us from a number of claims upon our purse, and which must be promptly met, but also place us in a very comfortable position for the future. We are aware that the withholding the sums respectively due us, by them, results from inadvertence more than an indisposition to pay; on their part, and we would therefore request, that in the winding up of their affairs for the year, they may not overlook the small sums due from each, which to them is inconsiderable, but when they come to be aggregated together, the amount is so large as to place us under great inconvenience. As it has ever been our wish to render our journal acceptable to its readers, and have evidence, in its extensive circulation, that it is so—as we desire to make it more so—we make this appeal, in the hope that our subscribers can remit us through their respective postmasters, free of charge, that they will, by their prompt action, place us under additional obligations of duty and respect.

The article on Pruning, from "Lindley's Horticulture," copied into this number, is of a character that will well compensate for the space allotted to it.

"A CHRISTMAS GIFT."—We are indebted to the Hon. John S. Skinner for his admirable pamphlet, entitled, "A Christmas Gift to the Young Agriculturists of the United States." We have read it with pride, pleasure, and profit, and to its gifted author we can say, that although we are too much in the vane of life to rank ourself with those in whom he addresses himself, we shall appreciate it the more, because the frosts of many winters have not placed us without the pale of his regards. This address is a most urgent appeal to the young agriculturists of the country, in behalf of the National Agricultural Society, just formed at Washington, of which Mr. S. is corresponding secretary, and we do but express our unfeigned

ed sentiments when we say, if unwearied zeal, attainments rare, and a mind of immense volume, qualify an individual for the post, that those by whom he was selected have been truly fortunate, for in him are concentrated all these. He may be said to have been the father of agricultural improvement in this country; for it was to him that the nation was indebted for the first American agricultural journal, from which the impetus was given to that spirit of research and noble emulation among husbandmen, which has, within the last quarter of a century, brought about a revolution in their pursuits, infinitely more important to us as a people than any event since the Revolution.

CORN AND COB CRUSHER—In accordance with our invitation to those gentlemen who have used this valuable machine, to give a statement to the public of the operation thereof, we have received the following letter from a venerable and respected physician of Baltimore county, addressed to the patentee. We would again remark, that Mr. Murray has left one of his crushers in our charge for the inspection of those wishing to supply themselves with a machine of the kind, and the other manufacturers will exhibit theirs at their respective establishments.

HUNTING RIDGE, BALT. CO. Dec. 31, 1841.

Mr. Wm. Murray:—Sir—Having purchased from you one of your Corn and Cob crushers and grinder, and being requested to state my opinion of the machine, I take particular pleasure in declaring that I have entire confidence in its performing all the work for which your advertisement recommends it to the public. I have had it used as well by hand as by horse power, and been perfectly satisfied with the work; by using a single horse to my machine, one bushel of new corn can be easily ground in ten minutes, and with old or dry corn I believe she would deliver ten bushels to the hour. It has long been a desideratum with me to procure an instrument that would perform its duty to my entire satisfaction; and I am gratified in being able to say that you have succeeded and produced one, of a more perfect, simple and economical construction than any that I have heretofore seen. In short I would unhesitatingly recommend it to public patronage, and with my best wishes for your success, I am, respectfully, yours, &c.

S. McCULLOH.

A NEW STEAM BOILER—Our attention has been called to an apparatus for steaming, which from the representations made to us in regard thereto, from a gentleman of the highest respectability who has erected one on his farm, as also from the statements made by superintendents of several of our public institutions, (which will probably appear in an advertisement in our next No.) we have reason to believe will prove a desideratum long desired by the agricultural community, for the feeding of stock, &c. We have not yet had an opportunity of examining the apparatus, but shall embrace the earliest moment to accept the polite invitation of the gentleman mentioned above, to visit him and see it in use. In the meantime, we copy the following description of it from the "Clipper" of this city, which will shew the nature of its construction.

Messrs. Editors: By the kind permission of the very polite Warden of your Penitentiary, (whose gentlemanly

bearing and friendly attention to strangers deserve high commendation,) we were permitted to see one of the most useful, and, as we think, among the most remarkable improvements of the present day. We mean the Steam Boiler there used for culinary purposes, and lately put up. By the use of this curious and practical invention, five large tanks filled with water are kept at the boiling point with a small boiler, not more than 20 inches in diameter, and not 2 feet long. The construction is simple. The boiler itself is divided into compartments, alternately of flame and water, so that a thin stratum of water is acted upon at one time by a sheet of flame, and immediately converted into steam at 212°, which escapes into the middle tank called the generator, by means of a connecting tube placed at the top and back part of the boiler, and the place of the expanded water or steam is supplied from the same tank by a tube situated still lower—so that a continued current of steam rushing into the generator and of cold water returning to the boiler to supply the vacuum is kept up, until the whole of the water is raised to the boiling point.

We were informed by Mr. Houlton that with it, at least five-sixths of the fuel is saved, and the amount of labor formerly required greatly diminished, and that the expense saved to the institution had long since repaid the original outlay. We must confess that we were somewhat astonished to see about two or three hundred gallons of water kept rapidly boiling with two or three small sticks of wood, at some distance from the tanks. Our surprise was increased when we were told that, left in that condition, and without adding wood, the coffee which was then in a course of preparation would be quite hot enough for use in the morning. The Alms House, we understand, has supplied itself with a similar apparatus; and we really think that this labor and fuel saving machine should be put up in every public institution, requiring much hot water for culinary or other purposes. To producers, for steaming and thereby swelling produce for cattle it cannot but be invaluable, and must shortly find a place upon every farm, as a profitable and time-saving instrument.

We have been informed that the patentee of this very curious and economical improvement in the arts resides amongst us. He certainly deserves encouragement. His invention, from its own utility, must find ample patronage.—*Baltimore Clipper*.

NECESSITY OF ATTENTION—In farming, as in every other business, attention and strict superintendence by the principal, are essential to success. No matter how good the manager may be, it is absolutely necessary that his employer should look close to his own interest, and see that the labor on the farm is conducted with fidelity and care, for there is no truth more incontrovertible, than that neglect on his part, from its contagious nature, will beget indifference on the part of those under him. It is not alone necessary that he should be able, and may give, proper directions, it is equally important that he see they are faithfully executed.

GREAT SALE OF HEREFORD CATTLE—In the month of October, Mr. Price, in England, sold 107 "lots" of Hereford cattle, ranging from 5 to £166 each. The whole number were bid off at £5354, or little over £50, or about \$250 average, for all sorts and sizes. Cattle in England are certainly much more valuable than in America; and what may be a little astonishing, these cattle were not bought for speculation; but nobles, gentlemen, &c. bought them for their own use.

OF PRUNING.

From Lindley's Horticulture.

The quantity of timber that a tree forms, the amount and quality of its secretions, the brilliancy of its colors, the size of its flowers, and, in short, its whole beauty depend upon the action of its branches and leaves, and their healthiness. The object of the pruner is to diminish the number of leaves and branches; whence it may be at once understood how delicate and the operations he has to practise, and how thorough a knowledge he ought to possess of all the laws which regulate the action of the organs of vegetation. If well directed, pruning is one of the most useful, and, if ill-directed, it is among the most mischievous operations that can take place upon a plant.

When a portion of a healthy plant is cut off, all that sap which would have been expended in supporting the part removed is directed into the parts which remain, and more especially into those in the immediate vicinity of it. Thus, if the leading bud of a growing branch is stopped, the lateral buds, which would otherwise have been dormant, are made to sprout forth; and, if a growing branch is shortened, then the very lowest buds, which seldom push, are brought into action: hence the necessity, in pruning, of cutting a useless branch clean out; otherwise the removal of one branch is only the cause of the production of a great many others. This effect of stopping does not always take place immediately; sometimes its first effect is to cause an accumulation of sap in a branch, which directs itself to the remaining buds, and organizes them against a future year. In ordinary cases, it is thus that spurs or short bearing-branches are obtained in great abundance. The growers of the filbert, in Kent, procure in this way greater quantities of bearing wood than nature unassisted would produce, for, as the filbert is always borne by the wood of a previous year, it is desirable that every bush should have as much of that wood as can be obtained, for which every thing else may be sacrificed; and such wood is readily secured by observing a continual system of shortening a young branch by two thirds, the effect of which is to call all its lower buds into growth the succeeding year; and thus each shoot of bearing wood is compelled to produce many others. The peach, by a somewhat similar system, has been made to bear fruit in unfavourable climates (*Hort. Trans.*, ii. 366); and every gardener knows how universally it is applied to the pear, apple, plum, and similar trees.* Even the fig-tree has thus been rendered much more fruitful than by any other method. "Whenever," says Mr. Knight, "a branch of this tree appears to be extending with too much luxuriance, its point, at the tenth or twelfth leaf, is pressed between the finger and thumb, without letting the nails come in contact with the bark, till the soft succulent substance is felt to yield to the pressure. Such branch, in consequence, ceases subsequently to elongate; and the sap is repulsed, to be expended where it is more wanted. A fruit ripens at the base of each leaf, and during the period in which the fruit is ripening, one or more of the lateral buds shoots, and is subsequently subjected to the same treatment, with the same result. When I have suffered such shoots to extend freely to their natural length, I have found that a small part of them only became productive, either in the same or the ensuing season, through I have seen that their buds obviously contained blossoms. I made several experiments to obtain fruit in the following spring from other parts of such branches, which were not successful; but I ultimately found that bending these branches, as far as could be done without danger of breaking them, rendered them extremely fruitful; and, in the present spring, thirteen figs ripened perfectly upon a branch of this kind within the space of ten inches. In training, the ends of all the shoots have been made, as far as practicable, to point downwards." (*Hort. Trans.*, iv. 201.)

The effect produced upon one part by the abstraction of some other part, thus shown in the development of buds which would otherwise be dormant, is seen in many other ways. If all the fruit of a plant is abstracted one

year when just forming, the fruit will be finer and more abundant the succeeding year, as happens when late frosts destroy our crops.* If of many flowers one only is left, that one, fed by the sap intended for the others, becomes so much finer. If the late figs, which never ripen, are abstracted, the early figs the next year are more numerous and larger. If of two unequal branches, the stronger is shortened and stopped in its growth, the other becomes stronger; and this is one of the most useful facts connected with pruning, because it enables a skilful cultivator to equalize the rate of growth of all parts of a tree; and, as has been already stated, this is of the greatest consequence in the operation of budding. In fact, the utility of the practice, so common in the management of fruit trees when very young, turns entirely upon this. A seedling tree has a hundred buds to support, and consequently the stem grows slowly, and the plant becomes bushy beaded; but, being cut down so as to leave only two or three buds, they spring upwards with great vigor, and, being reduced eventually to one, as happens practically, that one receives all the sap, which would otherwise be diverted into a hundred buds, and thrives accordingly, the bushy head being no longer found, but a clean straight stem instead. In the oak and the Spanish chesnut this is particularly conspicuous.

Nothing is more strictly to be guarded against than the disposition to bleed, which occurs in some plants when pruned, and to such an extent as to threaten them with death. In the vine, in milky plants, and in most climbers or twiners, this is particularly conspicuous; and it is not unfrequently observed in fruit trees with gummy or mucilaginous secretions, such as the plum, the peach, and other stone fruits. This property usually arises from the larger size of the vessels through which sap is propelled at the periods of early growths, which vessels are unable, when cut through, to collapse sufficiently to close their own apertures, when they necessarily pour forth their fluid contents as long as the roots continue to absorb them from the soil. If this is allowed to continue, the system becomes so exhausted as to be unable to recover from the shock, and the plant will either become very unhealthy, or will die.† The only mode of avoiding it is to take care never to wound such trees at the time when their sap first begins to flow; after a time, the demand upon the system by the leaves becomes so great that there is no surplus, and therefore bleeding does not take place when a wound is inflicted.‡

All these things show how extremely necessary it is to perform the operations of pruning with care and discretion. But in addition to the general facts already mentioned, there are others of a more special kind that require attention. The first thing to be thought of is the peculiar nature of the plant under operation, and the manner in which its special habits may render a special mode of pruning necessary. For example, the fruit of the fig and walnut is borne by the wood of the same season; that of the vine and filbert by that of the second season; and pears, apples, &c., by wood of some years' growth; it is clear that plants of these three kinds will each require a distinct plan of pruning for fruit.

The pruner has frequently no other object in view than

* [The apple trees, in this country, very commonly bear enormous crops every other year; and the orchardist finds himself nearly destitute of fruit one season, while his trees on the following year are nearly breaking down beneath their load. The excessive fecundity of one season so exhausts the tree that it requires another whole season for recovery. A certain and uniform crop may be obtained every year, by thinning out one-half or two-thirds of the apples when they have attained about one-fourth of their usual size. The remainder will grow to greater perfection than if all were left; while the tree, having produced only a moderate crop, will bear again the succeeding year. When this practice has been pursued for some years with trees that have just fairly commenced bearing, it often happens that they will afterwards produce moderate annual crops if left to themselves. A. J. D.]

§ [A solution of gum shellac in alcohol, of the consistence of thin paste (put on with a brush,) is an admirable application to wounds of stone-fruit trees, and others, which are disposed to bleed profusely. It is readily applied, adheres closely, excludes the air completely, and is less offensive to the eye than large plasters of clay, composition, &c. A. J. D.]

† "The vine of en bleeds excessively when pruned in an improper season, or when accidentally wounded; and, I believe, no mode of stopping the flow of the sap is at present known to gardeners. I therefore mention the following, which I discovered many years ago, and have always practiced with success:—If to four parts of scraped cheese be added one part of calcined oyster shells, or other pure calcareous earth, and this composition be pressed strongly into the pores of the wood, the sap will instantly cease to flow; so that the largest branch may, of course, be taken off at any season with safety." (Knight in *Hort. Trans.*, i. 102.)

that of thinning the branches so as to allow the free access of light and air to the fruit; and if this purpose is wisely followed, by merely removing superfluous foliage, the end attained is highly useful; it is clear, however, that in order to arrive at this end, without committing injury to the tree which is operated on, it is indispensable that its exact mode of bearing fruit should be in the first instance clearly ascertained.

The period of ripening fruit is sometimes changed by skilful pruning, as in the case of the raspberry, which may be made to bear a second crop of fruit in the autumn, after the first crop has been gathered. In order to effect this, the strongest canes, which in the ordinary course of things would bear a quantity of fruiting twigs, are cut down to within two or three eyes of the base; the laterals thus produced, being impelled into rapid growth by an exuberance of sap, are unable to form their fruit buds so early as those twigs in which excessive growth is not thus produced; and, consequently, while the latter fruit at one season, the others cannot reach a bearing state till some weeks later. Autumnal crops of summer roses, and of strawberries, have been sometimes procured by the destruction of the usual crop at a very early period of the season; the sap intended to nourish the flower buds destroyed is, after their removal, expended in forming new flower buds, which make their appearance at a later part of the year.

The season for pruning is usually midwinter, or at midsummer; the latter, for the purpose of removing new superfluous branches, the former for thinning and arranging the several parts of a tree. It is, however, the practice, occasionally, to perform what is called the winter pruning early in the autumn, as in the case of the gooseberry, and of the vine when weak; and the effect is found to be, that the shoots of such plants, in the succeeding season, are stronger than they would have been had the pruning been performed at a much later season. This is necessarily so, as a little reflection will show.

With regard to pruning plants when transplanted, there can be no doubt that it is more frequently injurious than beneficial. It is supposed, or seems to be, that when the branches of a transplanted tree are headed back, the remaining buds will break with more force than if the pruning had not been performed. * * * Its roots are not fully in action, but from the injuries sustained in removing they are capable of exercising but little influence on the branches. The great point to attain, in the first instance, is the renovation of the roots, and that will happen only in proportion to the healthy action of the leaves and buds; if, therefore, the branches of a plant are removed by the pruning knife, a great obstacle is opposed to this renovation; but, if they remain, new roots will be formed in proportion to their healthy action. The danger to be feared is, that the perspiration of the leaves may be so great as to exhaust the system of its fluid contents faster than the roots can restore them, and in careless transplanting this may doubtless happen: in such cases it is certainly requisite that some part of the branches should be pruned away; but no more should be taken off than the exigency of the case obviously requires; and, if the operation of transplanting has been well performed, there will be no necessity whatever. In the case of the transplanting of large trees, it is alleged that branches must be removed, in order to reduce the head, so that it may not be acted upon by the wind; but in general it is easy to prevent this action by artificial means.

In the nurseries it is a universal practice to prune the roots of transplanted trees; in gardens, this is as seldom performed. Which is right? If a wounded or bruised root is allowed to remain upon a transplanted tree, it is apt to decay, and this disease may spread to neighboring parts, which would otherwise be healthy; to remove the wounded parts of roots is therefore desirable. But the case is different with healthy roots. We must remember that every healthy and unmutated root which is removed is a loss of nutriment to the plant, and that too at a time when it is least able to spare it; and there cannot be any advantage in the removal. The nursery practice is probably intended to render the operation of transplanting large numbers of plants less troublesome; and, as it is chiefly applied to seedlings and young plants with a superabundance of roots, the loss in their case is not so much felt. If performed at all, it should take place in the autumn, for at that time the roots, like the other parts of a plant, are comparatively empty of fluid; but, if deferred till the spring, then the roots are all distended with fluid, which has been collecting in them during winter, and every part taken away carries with it a portion of that nur-

* [Nothing is more general, of late years, than complaints of the short period of productiveness in the peach tree, throughout the middle states. Although this is often owing to the worm, which gnawes the tree at the root, yet the almost total neglect of pruning is a frequent cause of sterility and decay. When left to itself the interior of the head of the tree becomes filled with small dead branches, and the trunk and larger limbs bark bound and moss covered; the whole tree is enfeebled; leaves are only produced at the extremity of the long branches, and the fruit borne, if any, is comparatively worthless. By pursuing the practice recommended in the text, the tree may be preserved for a long time in a high state of vigor and productiveness. A. J. D.]

ture which the plant had been laying up as the store upon which to commence its renewed growth.

It must now be obvious that, although root-pruning may be prejudicial in transplanting trees, it may be of the greatest service to such established trees, as are too prone to produce branches and leaves, instead of flowers and fruit. In these cases the excessive vigor is at once stopped by removal of some of the strongest roots, and consequently of a part of the superfluous food to which their "rankness" is owing. The operation has been successfully performed on the wall trees at Oulton, by Mr. Errington, one of our best English gardeners, and by many others, and, I believe, has never proved an objectionable practice under judicious management. Its effect is, *pro tanto*, to cut off the supply of food, and thus to arrest the rapid growth of the branches; and the connexion between this and the production of fruit has already been explained. It is by pushing the root-pruning to excess that the Chinese obtain the curious dwarf trees which excite so much curiosity in Europe. Mr. Livingston's account of their practice is so instructive, and contains so much that an intelligent gardener may turn to account, that I think it worth repeating here.

"When the dwarfing process is intended, the branch which had pushed radicles into the surrounding composition in sufficient abundance, and for a sufficient length of time, is separated from the tree, and planted in a shallow earthenware flower-pot, of an oblong square shape; it is sometimes made to rest upon a flat stone. The pot is then filled with small pieces of alluvial clay, which in the neighborhood of Canton is broken into bits, of about the size of common beans, being just sufficient to supply the scanty nourishment which the particular nature of the tree and the process require. In addition to a careful regulation of the quantity and quality of the earth, the quantity of water, and the management of the plants with respect to sun and shade, recourse is had to a great variety of mechanical contrivances, to produce the desired shape. The containing flower-pot is so narrow, that the root pushing out towards the sides are pretty effectually cramped. No radicle can descend; consequently it is only those which run towards the sides or upwards that can serve to convey nourishment properly, and it is easy to regulate those by cutting, burning, &c., so as to cramp the growth at pleasure. Every succeeding formation of leaves becomes more and more stunted,—the buds and radicles become diminished in the same proportion,—till at length that balance between the roots and leaves is obtained which suits the character of the dwarf required. In some trees this is accomplished in two or three years, but in others it requires at least twenty years." (*Hort. Trans.*, iv. 229.)

We have still to consider that peculiar kind of pruning which is technically called *ringing*. This consists in removing from a branch one or more rings of bark, by which the return of sap from the extremities is obstructed, and it is compelled to accumulate above the ring. Mr. Knight explains the physiological nature of the operation so well, that I cannot do better than quote his words.

"The true sap of trees is wholly generated in their leaves, from which it descends through their bark to the extremities of their roots, depositing in its course the matter which is successively added to the tree; whilst whatever portion of such sap is not thus expended sinks into the albumen, and joins the ascending current, to which it communicates powers not possessed by the recently absorbed fluid. When the course of the descending current is intercepted, that naturally stagnates and accumulates above the decorticated space; whence it is repulsed and carried upwards, to be expended in an increased production of blossoms, and of fruit: and, consistently with these conclusions, I have found that part of the albumen which is situated above the decorticated space to exceed in specific gravity, very considerably, that which lies below it. The repulsion of the descending fluid, therefore, accounts, I conceive, satisfactorily, for the increased production of blossoms, and more rapid growth of the fruit upon the decorticated branch: but there are causes which operate in promoting its more early maturity. The part of the branch which is below the decorticated space is ill supplied with nutriment, and ceases almost to grow; it in consequence operates less actively in impelling the ascending current of sap, which must also be impeded in its progress through the decorticated space. The parts which are above it must, therefore, be less abundantly supplied with moisture; and drought, in such cases, always operates very powerfully in accelerating maturity. When the branch

is small, or the space from which the bark has been taken off is considerable, it almost always operates in excess; a morbid state of early maturity is induced, and the fruit is worthless.

"If this view of the effects of partial decortication or ringing, be a just one, it follows that much of the success of the operation must be dependant upon the selection of proper seasons, and upon the mode of performing it being well adapted to the object of the operator. If that be the production of blossoms, or the means of making the blossoms set more freely, the ring of bark should be taken off early in the summer preceding the period at which blossoms are required: but, if the enlargement and more early maturity of the fruit be the objects, the operation should be delayed till the bark will readily part from the albumen in the spring. The breadth of the decorticated space must be adapted to the size of the branch; but I have never witnessed any except injurious effects, whenever the experiment had been made upon very small or very young branches, for such become debilitated and sickly, long before the fruit can acquire a proper state of maturity."

The effects of ringing in altering the appearance of the fruit is very striking. In the *Horticultural Transactions*, iii. 367, the following cases are reported:—In a French crab, the fruit, by ringing, was increased to more than double the size, and the color of it was much brightened. In a Minshall crab the size was not increased, but the appearance of the apple was so improved as to make it truly beautiful; its colors, both red and yellow, were very bright. In the courtpendu apple the improvement was still more conspicuous, the colors being changed from green and dull red, to brilliant yellow and scarlet. Many others of a similar kind are to be found recorded in books on horticulture. It is, however, by no means alone to the maturation or production of fruit that this operation is applicable; it will, of course, induce also the production of flowers, and it has occasionally been used for that purpose, as in the camellia. It is best performed in the early spring when the bark first separates freely from the wood.

This operation has, however, the disadvantage of wounding a branch severely; and, if performed extensively upon a tree, it is very apt, if not to kill it, at least to render it incurably unhealthy; for if the rings are not sufficiently wide to cut off all communication between the upper and lower lips of the wound they produce little effect, and if they are they are difficult to heal. For these reasons the operation is but little employed, other means being used instead. By some persons ligatures are made use of, and they would be preferable if they answered the purpose of obstructing the sap to the same extent as the abstraction of a ring of bark. In Malta, one of the objects of ringing, that of advancing the maturation of the fruit, is practised upon the zinzibey, or jujube tree, by merely fixing in the fork of a branch a very heavy stone, made fast with bandages; its weight forces the branches a little into a horizontal direction, and thus, independently of the pressure it exercises upon the parts it touches, obstructs the free circulation of the sap.

CALVES AMONG SHEEP.—Some farmers who have kept calves among sheep, recommend this method as decidedly superior. We have tried it with success, and noticed a great improvement in calves, in a month or two after put with sheep, when the sheep and calves were fed with hay only, the same as previously given to the calves.

The digestive powers of young cattle are very strong, and well calculated to disposed of coarse fodder, and on such fodder it is generally allowed that they do the best. Whether the calves receive an advantage from the coarse fodder on which they mostly subsist when with the sheep, as the sheep readily pick out the finest, or the dung and stale of sheep dropped on the fodder has a good effect, we cannot tell.

The orts of sheep are sometimes found to possess medicinal virtues for other stock. We once owned a sick horse, whose disorder seemed proof against other medicine, and by keeping him wholly on sheep's orts, which were mostly raked out of the manure, where they had laid for a month or two, and which were readily eaten, a speedy cure was produced. We knew not enough of *horseology* to determine what the disorder was. It was attended with a severe cough, loss of appetite, leanness and general debility.

It has been stated, and by our observation confirmed, that calves that run with sheep are never infested with lice, and not liable to disorders; and this method of taking care of them is very convenient, as they may be kept

in a yard with the sheep, separate from the other cattle, and watered in the morning before other cattle are turned out, which are liable to disturb or injure them. After the stronger cattle are housed early in the evening, the calves may again go to the water in peace and safety.

When calves run with sheep, it may be well to turn them up part of the time in the latter part of the winter or in the spring; else they will be more difficult to manage the second winter, if not accustomed to confinement, and frequent handling to tame them the first winter.

We have never known the practice of keeping calves among sheep to be pursued extensively, therefore we recommend it for experiment, as it is highly approved of by all who have tried it, as far as our information extends. Please try this way and report to us the result.—*Farmers' Journal*.

CAUSES OF THE DECAY OF TURNIPS.—The following is submitted to the opinion of all that are interested in the inquiry made in the first number of the present volume of the *New Genesee Farmer*, which is for the cause of the decay of ruta бага turnips.

I have come to the conclusion that early sowing in warm seasons, will lead to the true cause. When turnips are forward in the season, they fail for want of sufficient moisture during the extreme warm and dry weather, which affects the heart or centre of the turnip, and commences the decay, which first appears by the top turning yellow when the outside appears sound and healthy. This effect is produced on large turnips, when small ones will escape. Another cause may sometimes be observed. After the turnip is nearly matured, wet weather will produce a new life, and cause them to crack open, and during warm weather, water standing in the crevice will cause the decay.

It may be well to state, that the turnip and cabbage tribes flourish best in a climate something cooler than the summer in this section, and that warm, dry weather is equally injurious to both. Therefore, the time of sowing should be delayed as long as possible, and have them mature before the winter too nearly approaches, unless some is wanted for early use.—*Genesee Far.*

CROP OF CORN-STALKS.—Permit me to mention an experiment made by myself at Washington, on the subject of fodder.—Noticing the statement made in the French periodicals, that the stalks of corn (maize) contained one half as much saccharine matter as cane, and knowing that my ancestors made their molasses during the revolutionary war from these stalks, I sowed four and a half bushels of common corn, broadcast, and harrowed in the same. This labor was easily performed by a single man with a team (including the plowing) in a day. Having soaked the corn in saltpetre water, it took a rapid start, overtopped the weeds, and covered the ground with a forest of stalks. When fairly tasselled, I cut the same, which I fed to cattle, horses and hogs, both green and dry. If fed to swine after being cured, it was cut and fermented with chop or bran. Being anxious to ascertain the quantity, I measured a few square feet of the stoutest. I found I had 5 lbs. of green fodder per square foot; this may not seem incredible, and it is probably less than what would grow in rich lands at the West; if, however, we consider there are 43,560 square feet in an acre, we shall obtain 217,800 lbs., equal to 108½ tons of green fodder!

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OF PRUNING.

From Lindley's Horticulture.

The quantity of timber that a tree forms, the amount and quality of its of its secretions, the brilliancy of its colors, the size of its flowers, and, in short, its whole beauty depend upon the action of its branches and leaves, and their healthiness. The object of the pruner is to diminish the number of leaves and branches; whence it may be at once understood how delicate are the operations he has to practice, and how thorough a knowledge he ought to possess of all the laws which regulate the action of the organs of vegetation. If well directed, pruning is one of the most useful, and, if ill-directed, it is among the most mischievous, operations that can take place upon a plant.

When a portion of a healthy plant is cut off, all that sap which would have been expended in supporting the part removed is directed into the parts which remain, and more especially into those in the immediate vicinity of it. Thus, if the leading bud of a growing branch is stopped, the lateral buds, which would otherwise have been dormant, are made to sprout forth; and, if a growing branch is shortened, then the very lowest buds, which seldom push, are brought into action: hence the necessity, in pruning, of cutting a useless branch clean out; otherwise the removal of one branch is only the cause of the production of a great many others. This effect of stopping does not always take place immediately; sometimes its first effect is to cause an accumulation of sap in a branch, which directs itself to the remaining buds, and organizes them against a future year. In ordinary cases, it is thus that spurs or short bearing-branches are obtained in great abundance. The growers of the filbert, in Kent, procure in this way greater quantities of bearing wood than nature unassisted would produce, for, as the filbert is always borne by the wood of a previous year, it is desirable that every bush should have as much of that wood as can be obtained, for which every thing else may be sacrificed; and such wood is readily secured by observing a continual system of shortening a young branch by two thirds, the effect of which is to call all its lower buds into growth the succeeding year; and thus each shoot of bearing wood is compelled to produce many others. The peach, by a somewhat similar system, has been made to bear fruit in unfavourable climates (*Hort. Trans.*, ii. 366); and every gardener knows how universally it is applied to the pear, apple, plum, and similar trees.* Even the fig-tree has thus been rendered much more fruitful than by any other method. "Whenever," says Mr. Knight, "a branch of this tree appears to be extending with too much luxuriance, its point, at the tenth or twelfth leaf, is pressed between the finger and thumb, without letting the nails come in contact with the bark, till the soft succulent substance is felt to yield to the pressure. Such branch, in consequence, ceases subsequently to elongate; and the sap is repulsed, to be expended where it is more wanted. A fruit ripens at the base of each leaf, and during the period in which the fruit is ripening, one or more of the lateral buds shoots, and is subsequently subjected to the same treatment, with the same result. When I have suffered such shoots to extend freely to their natural length, I have found that a small part of them only became productive, either in the same or the ensuing season, through I have seen that their buds obviously contained blossoms. I made several experiments to obtain fruit in the following spring from other parts of such branches, which were not successful: but I ultimately found that bending these branches, as far as could be done without danger of breaking them, rendered them extremely fruitful; and, in the present spring, thirteen figs ripened perfectly upon a branch of this kind within the space of ten inches. In training, the ends of all the shoots have been made, as far as practicable, to point downwards." (*Hort. Trans.*, iv. 201.)

The effect produced upon one part by the abstraction of some other part, thus shown in the development of buds which would otherwise be dormant, is seen in many other ways. If all the fruit of a plant is abstracted one

year when just forming, the fruit will be finer and more abundant the succeeding year, as happens when late frosts destroy our crops.* If of many flowers one only is left, that one, fed by the sap intended for the others, becomes so much finer. If the late figs, which never ripen, are abstracted, the early figs the next year are more numerous and larger. If of two unequal branches, the stronger is shortened and stopped in its growth, the other becomes stronger; and this is one of the most useful facts connected with pruning, because it enables a skilful cultivator to equalize the rate of growth of all parts of a tree; and, as has been already stated, this is of the greatest consequence in the operation of budding. In fact, the utility of the practice, so common in the management of fruit trees when very young, turns entirely upon this. A seedling tree has a hundred buds to support, and consequently the stem grows slowly, and the plant becomes bushy beaded: but, being cut down so as to leave only two or three buds, they spring upwards with great vigor, and, being reduced eventually to one, as happens practically, that one receives all the sap, which would otherwise be diverted into a hundred buds, and thrives accordingly, the bushy head being no longer found, but a clean strait stem instead. In the oak and the Spanish chestnut this is particularly conspicuous.

Nothing is more strictly to be guarded against than the disposition to bleed, which occurs in some plants when pruned, and to such an extent as to threaten them with death. In the vine, in milky plants, and in most climbers or twiners, this is particularly conspicuous; and it is not unfrequently observed in fruit trees with gummy or mucilaginous secretions, such as the plum, the peach, and other stone fruits. This property usually arises from the larger size of the vessels through which sap is propelled at the periods of early growths, which vessels are unable, when cut through, to collapse sufficiently to close their own apertures, when they necessarily pour forth their fluid contents as long as the roots continue to absorb them from the soil. If this is allowed to continue, the system becomes so exhausted as to be unable to recover from the shock, and the plant will either become very unhealthy, or will die.† The only mode of avoiding it is to take care never to wound such trees at the time when their sap first begins to flow; after a time, the demand upon the system by the leaves becomes so great that there is no surplus, and therefore bleeding does not take place when a wound is inflicted.‡

All these things show how extremely necessary it is to perform the operations of pruning with care and discretion. But in addition to the general facts already mentioned, there are others of a more special kind that require attention. The first thing to be thought of is the peculiar nature of the plant under operation, and the manner in which its special habits may render a special mode of pruning necessary. For example, the fruit of the fig and walnut is borne by the wood of the same season; that of the vine and filbert by that of the second season; and pears, apples, &c., by wood of some years' growth; it is clear that plants of these three kinds will each require a distinct plan of pruning for fruit.

The pruner has frequently no other object in view than

* [The apple trees, in this country, very commonly bear enormous crops every other year; and the orchardist finds himself nearly destitute of fruit one season, while his trees on the following year are nearly breaking down beneath their load. The excessive fecundity of one season so exhausts the tree that it requires another whole season for recovery. A certain and uniform crop may be obtained every year, by thinning out one-half or two-thirds of the apples when they have attained about one-fourth of their usual size. The remainder will grow to greater perfection than if all were left; while the tree, having produced only a moderate crop, will bear again the succeeding year. When this practice has been pursued for some years with trees that have just fairly commenced bearing, it often happens that they will afterwards produce moderate annual crops if left to themselves. A. J. D.]

† [A solution of gum shellac in alcohol, of the consistence of thin paste (put on with a brush,) is an admirable application to wounds of stone-fruit trees, and others, which are disposed to bleed profusely. It is readily applied, adheres closely, excludes the air completely, and is less offensive to the eye than large plasters of clay, composition, &c. A. J. D.]

‡ "The vine of en bleeds excessively when pruned in an improper season, or when accidentally wounded; and, I believe, no mode of stopping the flow of the sap is at present known to gardeners. I therefore mention the following, which I discovered many years ago, and have always practised with success.—If to four parts of scraped cheese be added one part of calcined oyster shells, or other pure calcareous earth, and this composition be pressed strongly into the pores of the wood, the sap will instantly cease to flow; so that the largest branch may, of course, be taken off at any season with safety." (*Knight in Hort. Trans.*, i. 102.)

that of thinning the branches so as to allow the free access of light and air to the fruit; and if this purpose is wisely followed, by merely removing superfluous foliage, the end attained is highly useful; it is clear, however, that in order to arrive at this end, without committing injury to the tree which is operated on, it is indispensable that its exact mode of bearing fruit should be in the first instance clearly ascertained.

The period of ripening fruit is sometimes changed by skilful pruning, as in the case of the raspberry, which may be made to bear a second crop of fruit in the autumn, after the first crop has been gathered. In order to effect this, the strongest canes, which in the ordinary course of things would bear a quantity of fruiting twigs, are cut down to within two or three eyes of the base; the laterals thus produced, being impelled into rapid growth by an exuberance of sap, are unable to form their fruit buds so early as those twigs in which excessive growth is not thus produced; and, consequently, while the latter fruit at one season, the others cannot reach a bearing state till some weeks later. Autumnal crops of summer roses, and of strawberries, have been sometimes procured by the destruction of the usual crop at a very early period of the season; the sap intended to nourish the flower buds destroyed is, after their removal, expended in forming new flower buds, which make their appearance at a later part of the year.

The season for pruning is usually midwinter, or at midsummer; the latter, for the purpose of removing new superfluous branches, the former for thinning and arranging the several parts of a tree. It is, however, the practice, occasionally, to perform what is called the winter pruning early in the autumn, as in the case of the gooseberry, and of the vine when weak; and the effect is found to be, that the shoots of such plants, in the succeeding season, are stronger than they would have been had the pruning been performed at a much later season. This is necessarily so, as a little reflection will show.

With regard to pruning plants when transplanted, there can be no doubt that it is more frequently injurious than beneficial. It is supposed, or seems to be, that when the branches of a transplanted tree are headed back, the remaining buds will break with more force than if the pruning had not been performed. * * * * Its roots are not fully in action, but from the injuries sustained in removing they are capable of exercising but little influence on the branches. The great point to attain, in the first instance, is the renovation of the roots, and that will happen only in proportion to the healthy action of the leaves and buds: if, therefore, the branches of a plant are removed by the pruning knife, a great obstacle is opposed to this renovation; but, if they remain, new roots will be formed in proportion to their healthy action. The danger to be feared is, that the perspiration of the leaves may be so great as to exhaust the system of its fluid contents faster than the roots can restore them, and in careless transplanting this may doubtless happen: in such cases it is certainly requisite that some part of the branches should be pruned away; but no more should be taken off than the exigency of the case obviously requires; and, if the operation of transplanting has been well performed, there will be no necessity whatever. In the case of the transplanting of large trees, it is alleged that branches must be removed, in order to reduce the head, so that it may not be acted upon by the wind; but in general it is easy to prevent this action by artificial means.

In the nurseries it is a universal practice to prune the roots of transplanted trees; in gardens, this is as seldom performed. Which is right? If a wounded or bruised root is allowed to remain upon a transplanted tree, it is apt to decay, and this disease may spread to neighboring parts, which would otherwise be healthy; to remove the wounded parts of roots is therefore desirable. But the case is different with healthy roots. We must remember that every healthy and unutilized root which is removed is a loss of nutriment to the plant, and that too at a time when it is least able to spare it; and there cannot be any advantage in the removal. The nursery practice is probably intended to render the operation of transplanting large numbers of plants less troublesome; and, as it is chiefly applied to seedlings and young plants with a superabundance of roots, the loss in their case is not so much felt. If performed at all, it should take place in the autumn, for at that time the roots, like the other parts of a plant, are comparatively empty of fluid; but, if deferred till the spring, then the roots are all distended with fluid, which has been collecting in them during winter, and every part taken away carries with it a portion of that nur-

* [Nothing is more general, of late years, than complaints of the short period of productiveness in the peach tree, throughout the middle states. Although this is often owing to the worm, which gnawes the tree at the root, yet the almost total neglect of pruning is a frequent cause of sterility and decay. When left to itself the interior of the head of the tree becomes filled with small dead branches, and the trunk and larger limbs bark bound and moss covered; the whole tree is enfeebled; leaves are only produced at the extremity of the long branches, and the fruit borne, if any, is comparatively worthless. By pursuing the practice recommended in the text, the tree may be preserved for a long time in a high state of vigor and productiveness. A. J. D.]

ture which the plant had been laying up as the store upon which to commence its renewed growth.

It must now be obvious that, although root-pruning may be prejudicial in transplanting trees, it may be of the greatest service to such established trees, as are too prone to produce branches and leaves, instead of flowers and fruit. In these cases the excessive vigor is at once stopped by removal of some of the strongest roots, and consequently of a part of the superfluous food to which their "rankness" is owing. The operation has been successfully performed on the wall trees at Oulton, by Mr. Errington, one of our best English gardeners, and by many others, and, I believe, has never proved an objectionable practice under judicious management. Its effect is, *pro tanto*, to cut off the supply of food, and thus to arrest the rapid growth of the branches; and the connexion between this and the production of fruit has already been explained. It is by pushing the root-pruning to excess that the Chinese obtain the curious dwarf trees which excite so much curiosity in Europe. Mr. Livingston's account of their practice is so instructive, and contains so much that an intelligent gardener may turn to account, that I think it worth repeating here.

"When the dwarfing process is intended, the branch which had pushed radicles into the surrounding composition in sufficient abundance, and for a sufficient length of time, is separated from the tree, and planted in a shallow earthenware flower-pot, of an oblong square shape; it is sometimes made to rest upon a flat stone. The pot is then filled with small pieces of alluvial clay, which in the neighborhood of Canton is broken into bits, of about the size of common beans, being just sufficient to supply the scanty nourishment which the particular nature of the tree and the process require. In addition to a careful regulation of the quantity and quality of the earth, the quantity of water, and the management of the plants with respect to sun and shade, recourse is had to a great variety of mechanical contrivances, to produce the desired shape. The containing flower-pot is so narrow, that the root pushing out towards the sides are pretty effectually cramped. No radicle can descend; consequently it is only those which run towards the sides or upwards that can serve to convey nourishment properly, and it is easy to regulate those by cutting, burning, &c., so as to cramp the growth at pleasure. Every succeeding formation of leaves becomes more and more stunted,—the buds and radicles become diminished in the same proportion,—till at length that balance between the roots and leaves is obtained which suits the character of the dwarf required. In some trees this is accomplished in two or three years, but in others it requires at least twenty years." (*Hort. Trans.*, iv. 229.)

We have still to consider that peculiar kind of pruning which is technically called *ringing*. This consists in removing from a branch one or more rings of bark, by which the return of sap from the extremities is obstructed, and it is compelled to accumulate above the ring. Mr. Knight explains the physiological nature of the operation so well, that I cannot do better than quote his words.

"The true sap of trees is wholly generated in their leaves, from which it descends through their bark to the extremities of their roots, depositing in its course the matter which is successively added to the tree; whilst whatever portion of such sap is not thus expended sinks into the albumen, and joins the ascending current, to which it communicates powers not possessed by the recently absorbed fluid. When the course of the descending current is intercepted, that naturally stagnates and accumulates above the decorticated space; whence it is repulsed and carried upwards, to be expended in an increased production of blossoms, and of fruit; and, consistently with these conclusions, I have found that part of the albumen which is situated above the decorticated space to exceed in specific gravity, very considerably, that which lies below it. The repulsion of the descending fluid, therefore, accounts, I conceive, satisfactorily, for the increased production of blossoms, and more rapid growth of the fruit upon the decorticated branch: but there are causes which operate in promoting its more early maturity. The part of the branch which is below the decorticated space is ill supplied with nutriment, and ceases almost to grow; it in consequence operates less actively in impelling the ascending current of sap, which must also be impeded in its progress through the decorticated space. The parts which are above it must, therefore, be less abundantly supplied with moisture; and drought, in such cases, always operates very powerfully in accelerating maturity. When the branch

is small, or the space from which the bark has been taken off is considerable, it almost always operates in excess; a morbid state of early maturity is induced, and the fruit is worthless.

"If this view of the effects of partial decortication or ringing, be a just one, it follows that much of the success of the operation must be dependant upon the selection of proper seasons, and upon the mode of performing it being well adapted to the object of the operator. If that be the production of blossoms, or the means of making the blossoms set more freely, the ring of bark should be taken off early in the summer preceding the period at which blossoms are required; but, if the enlargement and more early maturity of the fruit be the objects, the operation should be delayed till the bark will readily part from the albumen in the spring. The breath of the decorticated space must be adapted to the size of the branch; but I have never witnessed any except injurious effects, whenever the experiment had been made upon very small or very young branches, for such become debilitated and sickly, long before the fruit can acquire a proper state of maturity."

The effects of ringing in altering the appearance of the fruit is very striking. In the *Horticultural Transactions*, iii. 367, the following cases are reported:—In a French crab, the fruit, by ringing, was increased to more than double the size, and the color of it was much brightened. In a Minshall crab the size was not increased, but the appearance of the apple was so improved as to make it truly beautiful; its colors, both red and yellow, were very bright. In the courtpendu apple the improvement was still more conspicuous, the colors being changed from green and dull red, to brilliant yellow and scarlet. Many others of a similar kind are to be found recorded in books on horticulture. It is, however, by no means alone to the maturation or production of fruit that this operation is applicable; it will, of course, induce also the production of flowers, and it has occasionally been used for that purpose, as in the camellia. It is best performed in the early spring when the bark first separates freely from the wood.

This operation has, however, the disadvantage of wounding a branch severely; and, if performed extensively upon a tree, it is very apt, if not to kill it, at least to render it incurably unhealthy; for if the rings are not sufficiently wide to cut off all communication between the upper and lower lips of the wound they produce little effect, and if they are they are difficult to heal. For these reasons the operation is but little employed, other means being used instead. By some persons ligatures are made use of, and they would be preferable if they answered the purpose of obstructing the sap to the same extent as the abstraction of a ring of bark. In Malta, one of the objects of ringing, that of advancing the maturation of the fruit, is practised upon the zinzibey, or jujube tree, by merely fixing in the fork of a branch a very heavy stone, made fast with bandages; its weight forces the branches a little into a horizontal direction, and thus, independently of the pressure it exercises upon the parts it touches, obstructs the free circulation of the sap.

CALVES AMONG SHEEP.—Some farmers who have kept calves among sheep, recommend this method as decidedly superior. We have tried it with success, and noticed a great improvement in calves, in a month or two after put with sheep, when the sheep and calves were fed with hay only, the same as previously given to the calves.

The digestive powers of young cattle are very strong, and well calculated to disposed of coarse fodder, and on such fodder it is generally allowed that they do the best. Whether the calves receive an advantage from the coarse fodder on which they mostly subsist when with the sheep, as the sheep readily pick out the finest, or the dung and stale of sheep dropped on the fodder has a good effect, we cannot tell.

The oris of sheep are sometimes found to possess medicinal virtues for other stock. We once owned a sick horse, whose disorder seemed proof against other medicine, and by keeping him wholly on sheep's oris, which were mostly raked out of the manure, where they had laid for a month or two, and which were readily eaten, a speedy cure was produced. We knew not enough of *herseology* to determine what the disorder was. It was attended with a severe cough, loss of appetite, leanness and general debility.

It has been stated, and by our observation confirmed, that calves that run with sheep are never infested with lice, and not liable to disorders; and this method of taking care of them is very convenient, as they may be kept

in a yard with the sheep, separate from the other cattle, and watered in the morning before other cattle are turned out, which are liable to disturb or injure them. After the stronger cattle are housed early in the evening, the calves may again go to the water in peace and safety.

When calves run with sheep, it may be well to turn them up part of the time in the latter part of the winter or in the spring; else they will be more difficult to manage the second winter, if not accustomed to confinement, and frequent handling to tame them the first winter.

We have never known the practice of keeping calves among sheep to be pursued extensively, therefore we recommend it for experiment, as it is highly approved of by all who have tried it, as far as our information extends. Please try this way and report to us the result.—*Farmers' Journal*.

CAUSES OF THE DECAY OF TURNIPS.—The following is submitted to the opinion of all that are interested in the inquiry made in the first number of the present volume of the *New Genesee Farmer*, which is for the cause of the decay of ruta baga turnips.

I have come to the conclusion that early sowing in warm seasons, will lead to the true cause. When turnips are forward in the season, they fail for want of sufficient moisture during the extreme warm and dry weather, which affects the heart or centre of the turnip, and commences the decay, which first appears by the top turning yellow when the outside appears sound and healthy. This effect is produced on large turnips, when small ones will escape. Another cause may sometimes be observed. After the turnip is nearly matured, wet weather will produce a new life, and cause them to crack open, and during warm weather, water standing in the crevice will cause the decay.

It may be well to state, that the turnip and cabbage tribes flourish best in a climate something cooler than the summer in this section, and that warm, dry weather is equally injurious to both. Therefore, the time of sowing should be delayed as long as possible, and have them mature before the winter too nearly approaches, unless some is wanted for early use.—*Genesee Far.*

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WORK FOR JANUARY.

Before we commence the labors of the month, and consequently open those of the present year, we might as well take a retrospective view of the operations on the farm during the past one. We cannot so far as the past is concerned, make amends for any error of judgment we may have committed, nor repair injuries resulting from omissions in the performance of duty—these are beyond our control, being engulfed in the abyss of time. But still it is profitable to look back upon these very errors and omissions, as they serve as beacon lights, to warn the observing mind of the dangers which have surrounded him, and points, as does the index to the traveller, with certainty, to the road by which, in future, he may avoid them. Experience, after all which may be said, is the great teacher to which we should look for lessons of wisdom, the one which if consulted in a true spirit, will never fail of imparting to us the means of improving our condition. The general, commanding armies, seeks knowledge from, and gains advantages by, the very errors of his antagonist, and turns his faults to account; and so, indeed, it may be said is the case in all the various avocations of life. We recollect to have heard an eminent advocate, after having gained an important trial, declare, that he had defended his client's interests on grounds the very opposite to those he had intended when he came into court, and that he had been induced to that course by the weak points left exposed by his antagonist. But we need not enter the arena of professions to find examples; for the broad theatre of life—the history of the world—are full of them, all going to show the tenableness of the position we have assumed—that, by a proper application of the knowledge thus obtained, we may convert our errors and mistakes into sources of benefit. This can only be done by a scrutinizing inspection, by the farmer, of his operations of past years, and an avoidance of such practices of culture as proved by their results to have been of an injurious tendency. To be able to do this effectually, every husbandman should keep a regular record of all his operations, in which he should note the kind, quality and quantity of manure applied, manner of preparing his land, time of sowing or planting any particular crop, the period of its coming up, the times, number and mode of working, together with such observations as might be suggested to his mind, in the progress of its maturing its seed or roots. And intimately connected with these duties, is another of no slight importance—we mean the keeping a daily record of the weather. With such facts before him, the intelligent agriculturist would, by analysis and comparison, be able to pursue a system of enlightened husbandry, and escape those countless mishaps which now, unaided by such lights, beset his trackway, and render his vocation one of precarious results. We could wish to pursue these reflections much farther, but our paper admonishes us, that it is time to leave the past and turn to the future labors.

ON THE FARM.

To the mind not disciplined by years of laborious devotion to the business, it would be readily conceived that there was but little to do, now that hoary frost has, as it were, locked up the bowels of the earth—but the practical man knows, from experience, that all who think thus, have indeed, but a superficial knowledge of the continuous routine of duties which daily require attention. Though there may be weeks at a time, at this season, when the ice-bound earth defies the skill of the ploughman, and laughs in derision at the well tempered share, still the claims upon the labor of a well conducted farm, like revolutions, never stand still, or go backward, but press forward with an impetuous force that cannot be re-

sisted, except it be met in a spirit of compliance. If we should be asked what can be done, we would say, much, and shall begin with

Winter Ploughing.—There are many open spells during winter when the ground may be broken up; it should, therefore, be the business of all to be in a state of readiness to avail themselves of all such occasions, come when they may, as such intervals are few and of short duration. Those who may have fields infested with garlic, should never let such an occasion pass by unimproved, as it is well known, that there is no means so effectual as winter ploughing in the destruction of this annoying pest. If it were possible to triplicate this operation, and thus secure its roots to a longer course of exposure to frosts, and the consequent alternations of freezing and thawing, a very confident hope might be entertained of its eradication. Independent, however, of the good thus to result from the cleanliness of the succeeding crop, the benefit which the soil itself, if a stiff one, would receive from the meliorating influence of frost, would be worth twice the cost of the ploughing.

Grain Fields.—Wheat and Rye fields should be carefully examined every few weeks, and wherever any obstruction may be found in the water-furrows they should be removed, as it is all important to keep the young plants dry at this season of the year.

Fencing and Timber.—Among the duties which you should make it a point of honor to perform, are those of preparing during this and the ensuing month, all the posts, rails, and timber of every description, which you may require during the ensuing spring, summer and autumn. Therefore if you have not already commenced this good work, begin it at once, and when you shall have prepared all that you may need, haul it where you intend to use it. By so doing you will save yourself that much time in the spring, when a dozen other duties will be pressing their claims upon you.

Fences.—If you have not already done so, make a thorough examination of every fence upon your farm; do so forthwith, and make the proper arrangements for their complete repair as early in the spring as you can execute such work.

Bars and Gates.—Substitute every pair of bars upon your farm by a good substantial gate, one that will shut and fasten itself, and thus secure yourself against the negligence of slaves and others. Gates besides being more sightly, are more secure than bars.

Fire Wood.—If you have not already anticipated us, have a full supply of fire wood hauled in for the use of the dwelling and quarters, without further delay, as you may rest assured, that it is always best to have whatever is necessary, done at the earliest possible moment, and we need not add, that a full and convenient supply of winter fuel is among the most necessary wants of life, for every descendant of Adam acknowledges, in gratitude, to the comfort—nay, luxury of a good warm fire of a dreary winter's day, when the keen and eager air draws tears from the eyes, and form them into icicles ere they find their way to the earth.

Stabling and sheds for Stock.—If you have not already provided yourself with comfortable accommodations for all your stock, let us in a spirit of pure humanity ask you to do so. With a willing mind and well directed energy, you may in a few days, or weeks, procure in your woods all the necessary materials for erecting them—and if your manager be what he ought to be, by his direction, your hands may be made to put them up, without your incurring the expense of employing carpenters. By providing comfortable quarters for your stock, less feed will answer. But if this were not so, that nobler virtue, humanity, should urge you to the measure, for surely no one imbued with the ordinary sympathies of our nature,

can repose in peaceful slumbers, while the animals entitled to his protection are reminding him, by their piteous moans, that they are exposed to the merciless pelting of the raging storm.

The Horses.—This noble animal, which contributes so much to the pleasure and the comforts of man, and to which, so much of his profits are owing, is entitled at this inclement season to the kindest treatment. It is not sufficient for his wants, that he should have doled out to him at certain intervals of the day certain quantities of food. Hay, fodder, corn, oats, chops, or meal, when given in sufficient quantities, are to be sure, competent to sustain the wants of his existence; but one so generous in his endurance of toil—so faithful to his trusts, is entitled, by every consideration of justice and humanity, to a large portion of the comforts, as well as the necessities of life. Besides provender, he should be provided with warm stabling and bedding, and receive twice a day, at least, a good currying, or carding, and be well rubbed down with a whisp of straw. These latter attentions, though they neither constitute food nor allay hunger nor thirst, are almost as essential to his comfort and health as food.

Grain in the Straw.—If you have not already gotten out your grain, it is time, full time, that you had set about doing it, therefore, as soon as you have read this, take measures to set all your disposable force to thrashing it out. For besides placing you in a posture to take advantage of the market, a thing at all times desirable, it will be so much work off of your hands, and enable you to direct your attention to something else important to be done. And as you get out your straw, have it carefully packed away and salted, so that it may make the more grateful provender, and thus not only be more readily eaten by your cattle, but contribute the more largely to their sustenance.

Milch Cows.—When we consider how universal is the passion in man for good butter, cream and milk, and into how many of his luxuries these substances enter—when we reflect that without the contributions which are daily made from the lacteals of these noble creatures, how tasteless would be many of the dishes which add so much to the pleasures of the table—we say, when we reflect upon these things, our mind is filled with wonder at the cold and grudging manner in which they are repaid for the manifold comforts and blessings they are instrumental in conferring upon man! But we fear, we may wonder on to the end of the chapter, without producing a reform in a custom so much more honored in the breach than in the observance; for unless we have read human nature to but little purpose,—“man, whose inhumanity to man,” in the language of Burns, “makes countless thousands mourn,” will be slow in recognizing the claims which humanity have woven around his heart in behalf of the poor cow, whose appeals can only be made as are those of the mute, by signs and looks that speak not, though they be as eloquent indices of suffering as are those which find utterance in the most thrilling phrase of the tongue. But as it may be useless to appeal to human sympathy, we will attack another chord, and see if we cannot, through that medium, find our way to the hearts of our reader. In the name of interest—self interest, then, we ask that the milch cow be well provided for, as it must be evident to all, that unless they are sheltered from the weather in a warm stable or shed, are kept clean and well bedded, and fed with succulent nourishing food, it is folly to expect them to retain their milk-yielding capacity. How can any rational being count upon a cow secreting milk, when her daily meal is dry straw, or some other coarse food, and her only covering the broad arch of heaven, and this too, in a temperature that would freeze any one in the shape of humanity? He, who could expect to be repaid for such treatment, by a

deep measure of milk, has faith enough to "call angels from the vasty deep" with the expectation of their coming. We, therefore, say to one and all, if you expect your milch cows, in winter, to yield you profit, you must give them nourishing food and warm quarters. Take good care of them, and they will pay you in an interest more than compound.

Oxen and Young Cattle.—If you expect the one to labor faithfully, or the other to do credit to your breeding, you must feed and lodge them well.

Sheep.—These animals to thrive and do well, require warm dry sheds, good feed, water and salt, and tar.

Watering and Salting Stock.—Thrice a day all your stock should have fresh water, and as often during the week they should be salted. Where practicable, it is best to give them their water in their yards. Every fold should be provided with a trough, in which, at all times, there should be kept a mixture of tar and salt, in equal proportions. Such precaution would be better than medicine, as it would be preventive of disease.

In-pig Sows, and Store Pigs.—Those animals should be provided with tight, warm, well littered pens, which should be cleaned once a week. Their food should be rich slops, composed of roots and meal. If you desire to have good hogs, recollect that cleanliness and plenty are no mean agents in the mystery of hog-growth, and that no starveling, whether supported by two, or four legs, ever yet arrived at a giant's height, or assumed the port of an alderman. Meal must be exchanged for size and weight.

Posts.—Whatever posts you may need next spring, should be morticed this winter, and the best time for such work, is of wet days, when the hands cannot work out in the weather.

Implements and Tools of all kinds must be carefully examined, and such as require it should be repaired, in order that, when needed, they may be ready.

Gearing of every description should be cleaned, oiled or greased, and put carefully away.

As little, if any work can be done this month in the **Kitchen Garden**, we will content ourselves by observing that the gardener should occupy his time in procuring pea sticks and bean poles, and in pruning such of the hardy shrubs as may require it. It may be well, however, to remark, that in all such gardens where there may be hot-beds, the sowing of cabbage plants and small salad-ing of all kinds may be carried on with advantage. Manure too, may be wheeled on to the beds, where it may be wanted in the spring. Such anticipations of labor are always judicious, and tend to economise time, a thing that cannot be too highly appreciated. All the tools and implements of gardening, should undergo a thorough inspection; such as may need it should be repaired, and sharpened, as nothing facilitates work more than good implements.

When you shall have read this, and digested its contents, recollect that, as the present is a holiday, the young ones look for those indulgencies which carry so much innocent delight to the heart, and that if one would be happy himself, he must make those around him happy also.

ANSWER TO INQUIRIES.

OPERATION AND EFFECT OF MANURES—APPLICATION AND QUANTITY.

We comply with cheerfulness with the request of our esteemed correspondent, to give him our views upon certain questions connected with agriculture, which he has done us the honor of propounding. But though we do so with cheerfulness, our compliance is not without embarrassment, as we are free to confess the field he has opened to our view, is of so vast a range that we fear we shall not be able to cover the whole ground, or to acquit ourselves in a way that will prove satisfactory to him or to

us. Upon the very first question, a volume might be written, and still leave much untold; for it asks,

[For statements to show the operation and effect of the different kinds of manure, on the particular soils of each county in the State.]

In the first place, no such information, as is indicated by the above inquiry, have ever been collected officially or individually, in this state. Important as have been the labors of the State Geologist, the information here sought, does not appear by his Reports to have come within the range of his investigations. We shall, therefore, for the want of the required geological knowledge, be compelled to limit our remarks to the "operation and effect of different kinds of manure on particular soils," without attempting to give the latter "a local habitation;" nor do we deem it at all important to be able to have done so. We are all aware that most of the lands now in cultivation in this state, were originally fertile—some, to be sure, more so than others; but all sufficiently so, to deserve the appellation of fruitfulness. We know too, that, in the process of cultivation, much of it have become greatly deteriorated in its productive character, and some as the term goes—entirely worn out. Now then, there must have been a cause for this change in condition, and the question arises, what is it? As we view the matter, the causes are various, but not such as to defy remedies. Let us here attempt to enumerate one or two of them.

Improvident cropping, that is, subjecting the soil to the yearly task of producing crops, for a long continued series of years, without returning to it, in the shape of manure, but little, if any thing to supply those periodical abstractions of food by the plants grown upon it. However much food, growing plants may derive from rain, from dew, and from the atmosphere, we believe that a very large portion is extracted from the earth, enters into and forms a component part of the grain, or whatsoever other product, may be grown upon it. The earth is like the money of an individual deposited in bank: if the owner continues to check without depositing, he will, by and by, find that there is nothing left to check upon, and that further drafts will be unavailing, and so it is with the owner of a farm, if he pursues the plan of taking all out and putting nothing in; exhaustion is the consequence: another cause is *improper rotation*, or *no rotation at all*. The experience of years have taught us, that, even under a system of liberal manuring, a change of the article grown is indispensable to successful culture: that land which brings out a good crop of any kind of grain one year, would, if the same grain were planted in it, the succeeding one produce an indifferent crop, whereas had another species of grain been planted therein, even though it required soil of equal strength, a different result would have taken place. From these facts it would seem that plants like the human palate, delight in change.

We have before premised that we were deficient in the information with respect to the particular soils of each county in this state, and must, therefore, speak of soils in classes, in connexion with the effect of different kinds of manure upon them. **Calcareous Clays.** Wherever there may be a clayey soil, wherein calcareous matter is known to be present, if it be infertile, the cause may be imputed to a want of vegetable or animal manure, and that should be applied. But it may so happen, that in what is called limestone lands, that is, where the soil under culture may be superincumbent upon a bed of limestone, that, through a long continuous course of cultivation, the supply of calcareous matter may have become so far exhausted, as to require being replenished. In which case reason would indicate, that lime should be applied. By the analyses of the chemists we know, that lime enters into, and forms a part of, all the vegetable productions of man. From the same source we know that the same substance in greater, or lesser quantities have been detected in most, if not all, of the fertile soils hitherto sub-

jected to analysis. We know also, that soils which had once been fruitful, but had lost that character, have been restored by the application of lime, animal and vegetable manure, and a judicious rotation of crops. And it is but a fair induction, that what has been once done, may be done again. We know from experience, that applications of barn-yard, stable, compost and other vegetable manures, lose their effect after a few years; and why? because by the process of decomposition, that these substances had been converted into the food of plants and extracted from the soil by them; the food, when so prepared, forming a portion of the vegetable body produced by the land. If then, this be the fact, why is it not as reasonable to presume, that the mineral body also, which equally enters into the growing plants, should require to be replenished, when from the same cause the earth becomes deprived of it?

Other Clay Soils.—There are clays not resting upon beds of limestone, or marl, that may be deficient in that portion of calcareous matter necessary to the healthful support of vegetable life, and the maturation of seed. Wherever this may be the case, lime, in some of its forms, must be supplied before a healthful action can take place. And while that is being applied, the safer course is to give to the soil a dressing of animal or vegetable manure. It is contended by some, that lime is not of itself a manure; that its peculiar action is that of a stimulant; that it assists the decomposition of other substances, and thus prepares the food of plants. But the more we look at the facts developed the last few years, the more are we inclined to adopt the opinion, that lime, besides being a preparer of manure, is manure of itself. If not, why is it found to be part and parcel of almost every vegetable production? Chemists tell us, that lime, besides correcting the acids of the earth, assimilates with the decomposing vegetable matter it finds in it, and gives it out gradually to the growing plants; thus not only preventing injury from excess of feeding by the plants, but continuing the action of such manures for a much longer period. We believe this latter assertion, because, in our experience, we have seen facts corroborative of its truth. But in believing this, we see no reason to renounce our faith in the nutritive qualities we are disposed to concede to it. We have noticed the action of lime upon every description of soil; from the stiff, adhesive clay, to the almost floating sand, and we have never seen it fail in its meliorating influences, whenever it had been properly applied, and sustained by congenial auxiliary manures. It will render a stiff clay friable, and impart a favorable degree of adhesiveness to sands; improve the character of gravels, and impart to loams, where there are vegetable matter present to receive the action of assimilation and decomposition, the utmost degree of fertilization.

On low wet clay lands, we would not apply it before draining them; but after having subjected such lands to that operation, we would apply it, and with the certainty of being paid for our outlay. We have never yet seen it applied on such lands without witnessing the best results, both in product and texture.

On Meadows, be the soil what it may, if drained and laid dry, its beneficial effects are unquestionable. There it is sure to find vegetable matter to consort with, and there it never fails to work miracles.

On Sands, Gravels and Loams, its utility is equally apparent, provided the fields of its action are such as to call its powers into effective and full operation—man without human society to mingle with and challenge the exercise of the impulses of his heart, would, in time, lose his love of social intercourse, and so it is with lime—if you desire it to effect the greatest amount of good of which it is susceptible, you must throw it into companionship with other bodies, and thus elicit its powers of transmutation, assimilation, and nutrition.

[Secondly. The quantity of each kind of manure necessary to operate beneficially, and the kind best adapted to each soil.]

As we have spoken pretty fully upon this branch of our correspondent's inquiries, in our two last numbers, under the head of "Compost Manures," the necessity for extended remarks here, is not so necessary as it would otherwise be; a few additional observations, however, may be appropriate.

1. As to the quantity of each kind of manure necessary to act beneficially. On clays not exhausted, where lime may be necessary, a hundred bushels to the acre should be applied.

On clays, whose fertility may have been exhausted by over-cropping, or from any other cause—or which may never have been fertile—from 40 to 50 bushels to the acre will be found to be enough for the first application, a dose of the same quantity to be repeated, after such land may have been carried through a course of rotation of crops.

2. On loams in good heart, a hundred bushels of lime may be applied not only in safety, but with decided advantage.

On exhausted loams, from 40 to 50 bushels to the acre is enough; to be repeated as above directed for infertile clays.

3. On sands and gravels, we think that 50 bushels is enough lime to the acre; to be repeated under the same circumstances as above.

4. Of barn-yard or stable manure, or composts, whether to be applied to clays, loams, gravels or sands, it is our opinion, that less than 20 double horse cart loads, of the capacity of 40 bushels each, should not be applied. To be sure, from 10 to 14 would tell; but then, we question much, whether one acre with 20 loads, would not produce as much as two manured with half that quantity to the acre. If so, economy would suggest the propriety of giving the larger dose, because, half the labor would be thus saved.

5. On all lands which naturally lay dry, or which have been made so, planted in corn, or set to clover, we would sow a bushel of plaster to the acre.

[Thirdly. Mode of applying the different kinds of manure.]

1. Lime and Plaster should be sown on the surface.

2. Barn-yard, stable and compost manures, should be spread broadcast, and ploughed in to the depth of 3 inches, in stiff lands, and say 4 inches in light soils.

This, however, is a disputable question, and the opinion seems to be gaining strength and friends, that all such manures will prove most beneficial when applied as a top-dressing. This opinion is entertained by gentlemen of great experience and judgment; but we deem it due to candor to say, that we have not yet seen any thing in the way of experiments, to shake our belief in the opposite opinion. If the food of plants is, in part, received in a gaseous form, and we believe it is, much of this portion of their sustenance will escape, if the manure be left on the surface, subject to the drying of the sun and atmosphere, nor will a little of its virtues be washed away, and consequently lost by the rains. But as we are open to conviction we shall hold ourselves prepared to profit by the lights of others.

[Fourthly. The quantity, say, what number of 1, 2, 3-horse cart-loads—or what number of 2 or 4 horse wagons per acre.]

[Fifthly. Whether manure should be ploughed under, and if under, the proper depth.]

These enquiries, our correspondent will perceive, we have answered above, being connected with those under other heads.

While on the subject of manures we may say a few words upon Marl. This manure may be used according to its quality and the character of the land upon which it may be placed, in quantities varying from 40 to 60 double horse cart loads to the acre. The heavier kinds, clay or stone, we should presume to be best adapted to light soils; the shell marl, to tenacious soils. On these, besides the benefit arising from the lime which they contain, such soils would be greatly improved in texture. Where, however, the shell marl may not be procurable, the others should be used, no matter what the character of the land, as its condition would be immensely meliorated by the calcareous principle contained therein.

The remaining inquiry shall be attended to in our next.

§2—We would respectfully ask that some Florist, competent to the task, would furnish our correspondent with the information sought for in the subjoined communication.

To the Editor of the American Farmer.

Sir:—Your paper containing a flower department, it is deemed unnecessary to offer an apology for making the following enquiry on the subject. Earnestly wishing to procure information, I will endeavour to describe a disease which has attacked some valuable roses that were brought into the house for preservation through the winter.

The plants were taken in, in November 1840, in fine health, and kept in a room heated by a wood fire, to the usual degree necessary to the comfort of a sitting room. In a month, one began to assume a mouldy appearance, the leaves, stems and buds looking whitish and slowly withering, not turning brown or falling off, but rather looking damp and blighted, and going from stem to stem, until the whole plant was affected, and tho' constantly putting forth fresh leaves, they soon showed the mildew, and withered like the last. They had air and water, but nothing arrested the disease. When spring came they were planted out, but the warm sun had no effect on them, and at last, in July, a healthy shoot putting up from the roots, the old wood was all cut away, thus losing the growth of several years,—before the winter was over nearly all the roses in the room were similarly affected. This winter again, some of the same and new plants were brought in, and placed in a room without fire, with a southern exposure, the thermometer never below 38 deg. and they already begin to show the same disease.

It is hoped if any one can tell the cause of this, or the remedy, they will do so, and confer a favor on one who has little knowledge or experience, and would be thankful for any information or suggestion on the subject.

Also, I would ask what means can be resorted to, to rid roses of the green insect that infests them, other than cleaning them by the hand, which is tedious, and to which it is supposed those having a great number of plants could scarcely resort.

The plants mentioned were carefully examined, it being thought the disease might proceed from this cause, but none could be discovered; they had some of the above kind on them, but the blight certainly was not produced by them, as other roses had more which were perfectly healthy.

From the Northern Light.

HORSES AND CATTLE.—BY WM. H. SOTHAM.

I purpose to show the value of the English cart-horse. If I am not mistaken, the origin of this breed is to be traced to Flanders, from whence it was imported to England, and there crossed with descendants of the Godolphin Arabian, producing the different kinds of horses that now exist there, and deriving their names from their breeders or the country in which they were bred.

The Flemish mare is a large, thick, sturdy, short-legged, compact, tame-spirited animal, destined for heavy, slow business. Put her to the traces and she will try their value—she will draw at "a standing pull" many times in succession, always ready at the smack of the whip to do her best.

All readers of the turf know the origin of Godolphin, and are aware of his spirit and speed. It is allowed by almost all sporting men that he is the foundation of the best runners. Many speak of the "black mare," and I know there have been several winners from her descent, and that they have proved in some instances excellent four mile horses, and repeat. Now I make the assertion that "the black mare" is a descendant from the Flemish mare. Should it not be so, I should like to see it disproved.

But without reference to the origin of either, or quotations from other writers, I will endeavor to state my own observation and experience.

For instance: I have seen a breeder select, say six cart-mares of the same color, small heads, long necks, high withers, short backs, round quarters, heavy legs, but light of hair, to cross with the best four-mile horse, for the purpose of breeding carriage horses, thinking by this means to obtain the exact stamp and color to match. But mark his disappointment. The first mare produces a large cart-horse, similar to the mare; the second a lighter, commonly called a plough-horse, or suffolk; the third a carriage-horse; the fourth a stager; the fifth a roadster; and the sixth a mongrel hunter. One of these would be

left entire, whose offspring would be more uncertain. There are some rare instances, that a mare from this cross will breed a whole family of equal goodness, but breed again from the family and the uncertainty still remains. How this is to be accounted for will take a wiser head than mine to explain; but I see plainly there is more certainty in producing a similar animal, to the sire or dam, when the pure blood on each side is observed. And I have also noticed that there is more dependance to be placed on a breeding mare the nearer she approaches pure blood. I will state a circumstance that came under my own practice. My father kept from one to three brood mares. They were generally hairy-legged animals. To remedy this evil, he put them to the "Suffolk," a horse of medium bone and free from long hair, and the result from one mare was remarkable: the first colt was a complete cob; and the second a mare resembling her dam. The third a mare, but of different style form either; her appearance denoted a hunter, and when a yearling I cut off her tail to prepare her for that purpose; and at five years old she showed as well in the field as the best. I trained her to fencing when young, and she could clear a hedge and ditch or gate equal to any. Her speed was above mediocrity; when with the "Harriers" (a pack of hounds with which the farmers train their young horses for sale) she could keep as near to their tails as necessary, but when brought to the fox hounds to try her value, her proof was low. When she entered the meeting field her spirit was high, her appearance grand, her head and tail up; she champed her bits, and seemed eager for a gallop. The challenge of the first hound cheered her; she neighed and listened, (good symptoms in a young hunter,) and for the first two or three miles she pulled hard, almost carried my weight in her mouth, and for this distance a better hunter never was saddled; but after this a stale fallow would throw her in the rear; while crossing it she would sob and hang heavy in hand. Here her sire and dam were at fault? the plough was intended for their progeny, and the furrowed ground seemed to call her to her right station; but I pressed her onward, out of sight of hounds, and almost out of hearing of their musical notes; a few struggles, and at intervals the shrill voice from the "whippers-ins" view holloo directed my course, and I arrived in the death field in time to seek for a "fresh fox." But mark the contrast: no hound could cheer her; her head and tail were down; and my chance for sale or sport was over. She proved a mongrel; my neighbors, who had better bred ones, laughed, and I could see positively the different grades, had I not known their pedigrees. The nearer relations to the race listened for a second challenge, and were equally ready for a second run, while those more closely allied to the Flemish family were out of place: they looked like ignorant dandies in good society—had better been kept at home, though these horses made excellent leaders and wheelers, and some as high as "gentlemen's carriages." It takes all kinds of men to make a world, and those men want all kinds of horses for their use: therefore between the cart-horse and the racer, we can breed such as to suit all. Though there is the same uncertainty in breeding cattle, there are not so many purposes for which they can be used: the shambles is the destiny of all, and should be the first consideration of the breeder; the milking qualifications have been rated more highly than consistent, and the quality of beef neglected. Without any intentional design of depreciating the Short Horns, I will make a few remarks on the breeding of that race. It has been for some time past a subject of deep study with me, to discover the reason of so much irregularity in this breed. I have seen most of the best herds in England, and many of those in this country, either on their way to their owners or at their farms, and have found them differ as widely as if no relation existed. I have seen a cow with as much beauty, symmetry and weight as an animal could possess, and an excellent milker; her own sister standing by, nearly equal to her in appearance, a very inferior milker; and another own sister, in the same herd, of such ordinary shape that a breeder would consider too inferior to be handled. And I have seen bulls sent to this country at very high prices from a noted breeder in England, far below in value to numbers that are bred here of herd book pedigrees; and according to the doctrine laid down by Short Horn breeders an animal cannot be deemed pure unless traced through the "Herd Book" to "Hubback." Now, what was he? An animal whose sire was never known; his dam met him on the highway. Therefore his descendants must

MURRAY'S CORN & COB CRUSHERS.

The subscriber, who exhibited the Corn and Cob Crusher and Grinder at the Agricultural meeting at Govanstown, continues to build them, and has so improved them that persons who have not got horse power, can use them by hand power, with sufficient facility to supply the wants of small farms, and with one or two horse power can do more work, he believes, than any other machine for the same purpose that will require double the power, as will soon be made manifest. The price of the crusher is \$35, or \$35 with an extra set of grinders.

He is also prepared to build portable HORSE POWERS of the very simplest and best construction, in every respect best suited for farmers in place of using cast iron wheels, he uses leather belts, which the farmer can keep in repair himself. It is now well tested that belts are as well adapted to driving machinery as cast iron wheels. The price of the horse power is \$50.

Orders for the above machines can be left with Mr. SAMUEL SANDS, at the office of the American Farmer, or with the subscriber, WM. MURRAY, Powhatan Factory, Baltimore county.

DURHAMS—DEVONS—BAKEWELLS.

For sale, 6 Durham Bulls from 5 to 30 mos. old, some of them very superior animals, at from \$55 to \$250 each.

Also one 20 months old, nearly full bred, and a very fine animal at \$60. Two full bred Devon Cows, 5 years old, with calves at their sides. Several Durham Heifers, 15 months and upwards, one in calf by a Durham bull.

And a variety of other Stock which will be sold very low, as the owners are short of provision to carry them through winter.

Also 2 fine young DEVON BULLS, last spring's calves, handsome well grown animals, and 3 HEIFERS, of same breed and age; these animals would be an acquisition to any gentleman of the South, and will be sold deliverable in Charleston, Savannah, Mobile or New Orleans, free of all expense and risk to the purchaser, at \$140 per pair.

Also a beautiful half Durham & half Devon Heifer, 1 year old in Sept.—and a full blood Devon Heifer of same age; these are very handsome animals, and will be delivered at either of the above ports free of risk and charges at \$85 each; they would be put to a Durham or Devon bull if preferred.

Also 2 very fine New Leicester (or Bakewell) RAMS, one 4, the other 2 years old—and 3 Rams and 6 Ewes, of the same breed, last spring's lambs, the latter will be delivered at either of the above mentioned ports at \$60 for a ram and 2 ewes—they were raised by Mr. Devant, on the Hon. Richard Caton's estate. Either of the older rams will be sold for \$40, or \$50 if delivered as above.

Also, SOUTHDOWNS at same prices—and BERKSHIRE Pigs \$20 a pair, 2 to 3 month old, box and feed extra if shipped.

S. SANDS,

PLOUGH!! PLOUGH!! PLOUGH!!!

A. G. & N. U. MOTT.

Corner of Esau and Forrest-streets, O. T., near the Belle Air Market.

Being the only Agents for this State, are now manufacturing the celebrated WILEY PATENT DOUBLE POINTED CAPT PLOUGH, of the New York Composition Castings, which is pronounced by some of the most eminent and experienced farmers in the country, to be the best which they have ever used, not only as regards the ease and facility with which it turns the sod, it being nearly one draught lighter than ploughs of the ordinary kind, but also for its economical qualities; for with this plough the Farmer is his own Blacksmith. Every farmer who has an eye to his own interest, would find that interest promoted by cutting and examining for himself. We also make to order, other ploughs of various kinds, CULTIVATORS, CORN SHELLERS, GRAIN CHADLERS, STRAW CUTTERS, RICE'S IMPROVED WHEAT FAN, &c., &c. Thankful for past favors, we shall endeavor to merit a continuance of the same. ma 3 13

HARVEST TOOLS.

J. S. EASTMAN, in Pratt near Hanover street, has on hand the real Waldron Grain and Grass Scythes; also American Grass Scythes that are warranted, and returnable if not good; superior Pennsylvania made Grain Cradles; a prime lot of Grass Swards at wholesale or retail; 400 Connecticut made Hay Rakes, equal to any ever offered in this market, at wholesale or retail; a prime article of cast-steel Hay and Manure Forks, also Hoes for garden use, and Elwell's best English made field hoes, together with a general assortment of Agricultural Implements, such as Ploughs of all kinds, Harrows, Cultivators for Corn and Tobacco, Wheat Fans, at various prices, a superior article; Horse-power Threshing Machines—Farm Carts, with lime spreading machinery attached—a large quantity of Plough Castings constantly on hand, for sale at retail or by the ton—Machine Castings and machinery, made in the best manner and at short notice—likewise repairs, &c., &c. On hand several different Corn Planters, that have a good reputation. N. B. Always on hand, Landreth's superior Garden Seeds, at retail.

J. S. EASTMAN.

MARTINEAU'S IRON HORSE-POWER.

The above outrepresents this horse-power, for which the subscriber is proprietor of the patent-right for Maryland, Delaware, and the Eastern Shore of Virginia; and he would most respectfully urge upon those wishing to obtain a horse power, to examine this horse power, for beauty, compactness and durability it has never been surpassed.

Threshing Machines, Wheat Fans, Cultivators, Harrows and the common hand Corn Sheller constantly on hand, and for sale at the lowest prices.

Agricultural Implements of any peculiar model made to order at the shortest notice.

Castings for all kinds of ploughs, constantly on hand by the pound or ton. A liberal discount will be made to country merchants who purchase to sell again.

Mr. Henry manufacturer his reaping machines at this establishment, corner of Front & Ploughman-sts. opposite Baltimore St. Bridge, or No. 20, Pratt street. Baltimore, mar 31, 1841

THE LIME KILNS.

The subscriber, in order to meet the increasing demand for Lime for agricultural purposes, has established Kilns for burning the same on the Rock Point farm, belonging to the Messrs. Lancaster, in Charles county, Md. where he is ready to supply all demands for this section of the state, and the waters of the Potomac, on accommodating terms. Orders directed to him at Milton Hill Post Office, Md. will meet prompt attention.

de 7 6m

WM. M. DOWNING.

MOTT'S AGRICULTURAL FURNACE.

The subscriber respectfully informs his customers, and the public generally, that he has on hand, and intends constantly to keep, a supply of MOTT'S JUSTLY CELEBRATED AGRICULTURAL FURNACES, for cooking vegetables and grain for stock of all kinds. They vary in size from HALF a barrel to FOUR barrels, and are better adapted to the purpose for which they are intended than any other yet invented; obtained the premium of the American Institute, and have given satisfaction to every gentleman by whom they have been purchased. Col. C. N. BEMMNT, the distinguished agriculturist near Albany, New York, who has had one in use for some time, in a letter to the editor of the Cultivator, says:

"The one I purchased last fall, I continued to use during the winter, and have found no reason to alter the opinion then expressed; but on the contrary, I am more confirmed, and do not hesitate, without qualification, to recommend it, with the late improvements, as superior to any thing, for the purpose intended, which I have ever used, or which has fallen under my observation."

"Mr. Mott has lately sent me one of the capacity of two barrels, containing the improvements, which consist in casting 'points of attachment' or gudgeons, on the rim or sides of the kettle, 'so that with a crane or lever' it may be raised out of the casing and the contents emptied out, and to facilitate which, a loop or eye is cast on the bottom of the kettle so that it can be done without burning the fingers. The flange also, has been extended beyond the edge of the casing, so that if water boil over it will not run down the flues and put out the fire."

These furnaces and boilers are portable and may be set up in any out-house, being from their compactness and construction perfectly safe. The furnaces are made of cast iron and peculiarly calculated to economize fuel.

The following are the prices for one of the capacity of a half barrel

do	do	do	One barrel	\$12.50
do	do	do	One and a half	20.00
do	do	do	Two barrels	24.00
do	do	do	Three do	38.00
do	do	do	Four do	49.00

A. WILLIAMS, Corner of Light & Pratt St. Balt. Md. de 15

HALF DURHAM BULL.

For sale, a bull sired by Mr. Beltzover's imported Durham bull, and out of a celebrated butter cow, believed to be part Alderney, and which gave 23 quarts of milk per day for several months after producing him. He is about 20 months old, of good size, and form. Price \$25. Apply to S. SANDS.

BERKSHIRE PIGS.

The subscriber will receive orders for his fall litters of pure Berkshire Pigs bred from stock selected of C. N. Bement & John Loessing, esqs. of Albany, N.Y. and importations from England—Price, same as at Albany for pure Berkshire \$30 per pair; for Irish Graziers \$20 per pair, with the addition of \$1 for Cage, deliverable in or shipped at the port of Baltimore.

Address, post paid. JOHN P. E. STANLEY, on 24 Or apply at No. 50 S. Calvert street, Baltimore

JOHN T. DURING, Agricultural Implement Manufacturer, Grant and Ellicott street, near Pratt st. in the rear of Messrs. Dinmore & Kyle's, Baltimore.

Anxious to render satisfaction to his friends and the public, has prepared a stock of Implements in his line, manufactured by experienced workmen, with materials selected with care; among them, Rice's Improved Wheat Fan, said to be the best in use, and highly approved of at the recent Fair at Ellicott's Mills, \$25
Straw Cutters, from \$5 to 20
Corn Shellers, hand or horse power, 13 to 25
Threshing Machines with horse powers, warranted, and well attended in putting up, \$150
Corn and Cob Mills, new pattern.

The Wiley Plough, Beach's do. Chenoweth's do. New York do, self sharpening do, hill-side do of 2 sizes, left hand Ploughs of various sizes, Harrows, hinge or plain; Cultivators, expanding or plain, 4 sizes; Wheat Cradles, Grass Scythes hung, &c.

Castings for machinery or ploughs, wholesale or retail; Hames, Singletrees, and a general assortment of Tools for farm or garden purposes, all of which will be sold on the most pleasing terms to suit purchasers. oc 14

IMPORTED JACKS, JENNY, BROAD-TAILED AND OTHER SHEEP, BLOODED COLTS.

The subscriber is authorized to sell TWO JACKS and a JENNY. The Jacks are of the largest size, from the Island of Majorca, sure foot getters, and were selected in person and imported by the present owner; the Jenny is 5 years old, full 60 inches, has bred two colts in the two last years, and is now with foal to the largest Jack.

Also, Broad-tailed, full South-Down, Bakewell & Merino Sheep. The Ewes of which are with lamb to the Broad-tail.

Also, the Berkshires, Andalusian, Bedford, and the large Chester county Hog, with 7 fine blooded Colts and Fillies.

PIGS FOR SALE.

For sale, 3 pair 3-4 Berkshires & 1-4 Irish Grazer, near 3 months old. Also full bred Black Berkshires. S. SANDS.

GREAT IMPROVEMENTS.**HUSSEY'S REAPING MACHINE—CORN-SHELLER AND HUSKER—CORN & COB CRUSHER & GRINDER.**

A great improvement has been made by the subscriber in the Reaping Machine since last year; the cog-wheel machines now making for 1842, will combine all the material advantages of both the cog wheel and cam wheel machines as made last year. By means of these improvements, the machine is made capable of cutting 6 feet in width with the same facility that it cut 5 feet last year—their durability is also greatly increased. The cam wheel and lever machines will also be made for those who choose them; they are also much improved. An experimental machine of each kind was prepared and used in the last harvest, by which the improvements now offered were fully tested. Both machines are warranted bona fide—price \$150.

The Corn Sheller and Husker is warranted to shell 100 bushels per hour with proper management and moderate exertion. A gentleman of the highest respectability in Washington county, Md. assures me that he shelled 590 bushels in 34 hours with one of these machines. It is also warranted to shell and husk at the same operation as fast as two men can put in the corn by handfuls of 6 ears at a time—when the corn is poured from a basket, the husk or chuck will in some degree impede its entrance; it is for this reason that husked corn will shell so much more rapidly. This machine has recently been much improved by the subscriber. It can be driven by any ordinary horse-power—price \$30.

The Corn and Cob Crusher and Grinder is a late improvement by the subscriber, a new arrangement—in the first hour which it ever run, which was on the 22d inst. it crushed and ground from corn in the ear 8 1-2 bushels—the gentleman on whose place it was tried, a few miles from the city, expresses his satisfaction with the quality of its work. The mill is strong and simple, and compactly arranged, occupying about 3 feet by 2 on the floor, and containing a convenient meal box directly below the grinders. It can be driven by any horse power suited for thrashing wheat—price \$40 including an extra set of grinders, which can be put in by any intelligent farmer.

Orders may be directed to me in Baltimore by those who wish to procure the above machines.

Those who design getting Reaping Machines for the harvest of 18-2, will please give me early notice, designating the kind they choose, whether the cog wheel and crank, or the cam wheel and lever. To those who do not make the selection themselves I shall invariably send those which I have the most confidence in myself, without regard to any difference in first cost.

In expressing my thanks to farmers and others for their very liberal patronage thus far bestowed upon me, I can assure them that no exertion shall be wanting on my part to render the machines now offered to them as perfect as possible, and well suited to the purpose for which they are designed, for which the experience I have had may perhaps be some guarantee.

Baltimore, Oct. 25, 1841. OBED HUSSEY.

AGRICULTURAL MACHINERY.

For sale by ROBERT SINCLAIR Jr. & CO.

No. 60 Light Street.

Goldborough's Cornsheller & Husking Machine—warranted to husk & shell 900 bus. of corn per day, or shell in strip'd state 1200 bushels \$35 00

Do. for manual power which performs at about half the rate as above 35,00

Do for Husking & Shelling Corn and Thrashing Grain, all of which is done perfectly and with astonishing despatch, 60 00

Horse Powers adapted to the draft of 2 or more horses, made very simple and strong, 100a125

Spike Threshing Machines, warranted to be equal to any in this country, 50 to 75

Straw Carriers for separating straw from the grain when threshing, 20 to 25

Patent Hay and Tobacco Presses, very simply constructed and great power, 125

Knowles' patent Grain and Grass Cutting machines, 150

Vegetable Cutters, warranted to cut 1000 bushels turnips, beets, &c. per day, 20

Grindstones, hung on friction rollers, 15

Centrifugal Dissemminators for spreading lime, ashes, &c. 30

Baldwin's patent Corn and Cob Crusher, 65

Cylindrical Straw Cutters for manual or horse power, a first rate article, 30a45a75

Fanning Mills, 25a30

25 sorts Ploughs, embracing the sub-soil, hill side, paring and every other useful variety, 3a15

Cultivators for Tobacco and Corn, made to expand and stationary, 5a6.50

Harrows, hinge, V shape, common drag and improved Eng. 7a25

Drill and sowing Machines, 12a25

Ox Yokes, Swingle Trees, Hoes, and every other variety of Agricultural Tool

GARDEN & FIELD SEEDS, embracing a very large and genuine assortment

Books on cultivation, and management of Stock

TREES and PLANTS supplied at the shortest notice.

* Catalogues of the above supplied gratis, giving prices and description of each article for sale. so 29

LIME—LIME.

The subscribers are prepared to furnish any quantity of Oyster Shell or Stone Lime of a very superior quality at short notice at their Kilns at Spring Garden, near the foot of Eutaw street, Baltimore, and upon as good terms as can be had at any other establishment in the State.

They invite the attention of farmers and those interested in the use of the article, and would be pleased to communicate any information either verbally or by letter. The Kilns being situated immediately upon the water, vessels can be loaded very expeditiously. N.B. Wood received in payment at market price. ap. 23 3m

E. J. COOPER & Co.